

1

SEQUENCE LISTING

<110> BEELEY, NIGEL ROBERT ARNOLD PRICKETT, KATHRYN S. BHAVSAR, SUNIL

<120> USE OF EXENDINS AND AGONISTS THEREOF FOR THE REDUCTION OF FOOD INTAKE

<130> 231/181

<140> US 09/003,869

<141> 1998-01-07

<150> US 60/034,905

<151> 1997-01-07

<150> US 60/055,404

<151> 1997-08-08

<150> US 60/065,442

<151> 1997-11-14

<150> US 60/066,029

<151> 1997-11-14

<160> 188

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 39

<212> PRT

<213> Heloderma horridum

<220>

<221> AMIDATION

<222> (39)...(39)

<223> amidated Ser (Serinamide)

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<400> 1
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His Ser Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser 20 25 30

Ser Gly Ala Pro Pro Pro Ser 35

<210> 2

<211> 39

<212> PRT

<213> Heloderma suspectum

<220>

<221> AMIDATION

<222> (39)...(39)

<223> amidated Ser (Serinamide)

<400> 2

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu 1 5 10 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
20 25 30

Ser Gly Ala Pro Pro Pro Ser 35

<210> 3

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<221> VARIANT

<222> (1)...(8)

<223> Xaa in position 1 is His, Arg or Tyr; Xaa in position 2 is Ser, Gly, Ala or Thr; Xaa in position 3 is Asp or Glu; Xaa in position 6 is Phe, Tyr or naphthylalanine; Xaa in position 7 is Thr or Ser; Xaa in position 8 is Ser or Thr;

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<220>
      <221> VARIANT
      <222> (9)...(22)
      <223> Xaa in position 9 is Asp or Glu; Xaa in position 10 is Leu, Ile,
            Val, pentylglycine or Met; Xaa in position 14 is Leu, Ile,
            pentylglycine, Val or Met; Xaa in position 22 is Phe, Tyr or
            naphthylalanine;
      <220>
      <221> VARIANT
      <222> (23)...(25)
      <223> Xaa in position 23 is Ile, Val, Leu, pentylglycine, tert-
            butylglycine or Met; Xaa in position 24 is Glu or Asp;
            Xaa in position 25 is Trp, Phe, Tyr, or naphthylalanine;
      <220>
      <221> VARIANT
      <222> (31)...(39)
      <223> Xaa in positions 31, 36, 37 and 38 are independently Pro,
            homoproline, 3-hydroxyproline, 4-hydroxyproline, thioproline,
            N-alkylglycine, N-alkylpentylglycine or N-alkylalanine;
            Xaa in position 39 is Ser, Thr or Tyr;
      <220>
      <221> VARIANT
      <222> (1)...(39)
      <223> with the proviso that the compound is not exendin-3
            or exendin-4.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> The terminal amino acid may or may not be amidated.
      <400> 3
Xaa Xaa Xaa Gly Thr Xaa Xaa Xaa Xaa Ser Lys Gln Xaa Glu Glu
                 5
Glu Ala Val Arg Leu Xaa Xaa Xaa Leu Lys Asn Gly Gly Xaa Ser
            20
                                25
                                                    30
Ser Gly Ala Xaa Xaa Xaa
        35
      <210> 4
      <211> 38
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<212> PRT

<213> Artificial Sequence

1

<220>

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<221> VARIANT

<222> (1)...(7)

<223> Xaa in position 1 is His, Arg or Tyr; Xaa in position 2 is Ser, Gly, Ala or Thr; Xaa in position 3 is Asp or Glu; Xaa in position 5 is Ala or Thr; Xaa in position 6 is Ala, Phe, Tyr or naphthylalanine; Xaa in position 7 is Thr or Ser;

<220>

<221> VARIANT

<222> (8)...(13)

<223> Xaa in position 8 is Ala, Ser or Thr; Xaa in position 9 is Asp or Glu; Xaa in position 10 is Ala, Leu, Ile, Val, pentylglycine or Met; Xaa in position 11 is Ala or Ser; Xaa in position 12 is Ala or Lys; Xaa in position 13 is Ala or Gln;

<220>

<221> VARIANT

<222> (14)...(20)

<223> Xaa in position 14 is Ala, Leu, Ile, pentylglycine, Val or Met; Xaa in position 15 is Ala or Glu; Xaa in position 16 is Ala or Glu; Xaa in position 17 is Ala or Glu; Xaa in position 19 is Ala or Val; Xaa in position 20 is Ala or Arg;

<220>

<221> VARIANT

<222> (21)...(24)

<223> Xaa in position 21 is Ala or Leu; Xaa in position 22 is Ala, Phe, Tyr or naphthylalanine; Xaa in position 23 is Ile, Val, Leu, pentylglycine, tert-butylglycine or Met; Xaa in position 24 is Ala, Glu or Asp;

<220>

<221> VARIANT

<222> (25)...(27)

<223> Xaa in position 25 is Ala, Trp, Phe, Tyr or naphthylalanine; Xaa in position 26 is Ala or Leu; Xaa in position 27 is Ala or Lys;

<220>

<221> VARIANT

<222> (28)...(28)

<223> Xaa in position 28 is Ala or Asn;

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<220>
<221> VARIANT
<222> (29)...(30)
<223> Xaa in position 29 is Gly or amino acid is missing;
      Xaa in position 30 is Gly or amino acid is missing;
<220>
<221> VARIANT
<222> (31)...(32)
<223> Xaa in position 31 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing; Xaa in position
      32 is Ser or amino acid is missing;
<220>
<221> VARIANT
<222> (33)...(35)
<223> Xaa in position 33 is Ser or amino acid is missing;
      Xaa in position 34 is Gly or amino acid is missing;
      Xaa in position 35 is Ala or amino acid is missing;
<220>
<221> VARIANT
<222> (36)...(36)
<223> Xaa in position 36 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> VARIANT
<222> (37)...(37)
<223> Xaa in position 37 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> VARIANT
<222> (38)...(38)
<223> Xaa in position 38 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> AMIDATION
<222> (28)...(28)
<223> When Xaa in position 28 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
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<220>
<221> AMIDATION
<222> (29)...(29)
<223> When Gly in position 29 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (30)...(30)
<223> When Gly in position 30 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (31)...(31)
<223> When Xaa in position 31 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (32)...(32)
<223> When Ser in position 32 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (33)...(33)
<223> When Ser in position 33 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (34)...(34)
<223> When Gly in position 34 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (35)...(35)
<223> When Ala in position 35 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (36)...(36)
<223> When Xaa in position 36 is terminal amino acid in sequence,
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terminal amino acid may or may not be amidated;

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<220>
     <221> AMIDATION
     <222> (37)...(37)
     <223> When Xaa in position 37 is terminal amino acid in sequence,
           terminal amino acid may or may not be amidated;
     <220>
     <221> AMIDATION
     <222> (38)...(38)
     <223> When Xaa in position 38 is terminal amino acid in sequence,
           terminal amino acid may or may not be amidated;
     <220>
     <221> VARIANT
     <222> (5)...(28)
     <223> provided that no more than three of Xaa in positions 5, 6,
           8, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 24, 25, 26,
           27 and 28 are Ala.
     <400> 4
25
Xaa Xaa Xaa Xaa Xaa
       35
     <210> 5
     <211> 39
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
          compound
     <220>
     <221> VARIANT
     <222> (1)...(5)
     <223> Xaa in position 1 is His, Arg, Tyr, Ala, Norval, Val or
          Norleu; Xaa in position 2 is Ser, Gly, Ala or Thr; Xaa in
          position 3 is Ala, Asp or Glu; Xaa in position 4 is Ala, Norval,
          Val, Norleu or Gly; Xaa in position 5 is Ala or Thr;
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<220>
<221> VARIANT
<222> (6)...(10)
<223> Xaa in position 6 is Phe, Tyr or naphthylalanine; Xaa in
      position 7 is Thr or Ser; Xaa in position 8 is Ala, Ser or Thr;
      Xaa in position 9 is Ala, Norval, Val, Norleu, Asp or Glu;
      Xaa in position 10 is Ala, Leu, Ile, Val, pentylglycine or Met;
<220>
<221> VARIANT
<222> (11)...(16)
<223> Xaa in position 11 is Ala or Ser; Xaa in position 12 is Ala or
      Lys; Xaa in position 13 is Ala or Gln; Xaa in position 14 is Ala,
      Leu, Ile, pentylglycine, Val or Met; Xaa in position 15 is Ala
      or Glu; Xaa in position 16 is Ala or Glu;
<220>
<221> VARIANT
<222> (17)...(22)
<223> Xaa in position 17 is Ala or Glu; Xaa in position 19 is Ala or
      Val; Xaa in position 20 is Ala or Arg; Xaa in position 21 is
      Ala or Leu; Xaa in position 22 is Phe, Tyr or naphthylalanine;
<220>
<221> VARIANT
<222> (23)...(26)
<223> Xaa in position 23 is Ile, Val, Leu, pentylglycine, tert-
      butylglycine or Met; Xaa in position 24 is is Ala, Glu or Asp;
      Xaa in position 25 is Ala, Trp, Phe, Tyr or naphthylalanine;
      Xaa in position 26 is Ala or Leu;
<220>
<221> VARIANT
<222> (27)...(28)
<223> Xaa in position 27 is Ala or Lys; Xaa in position 28 is Ala or
      Asn;
<220>
<221> VARIANT
<222> (29)...(30)
<223> Xaa in position 29 is Gly or amino acid is missing;
     Xaa in position 30 is Gly or amino acid is missing;
<220>
<221> VARIANT
<222> (31)...(32)
<223> Xaa in position 31 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
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N-alkylalanine, or amino acid is missing; Xaa in position

32 is Ser or amino acid is missing;

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<220>
<221> VARIANT
<222> (33)...(35)
<223> Xaa in position 33 is Ser or amino acid is missing;
      Xaa in position 34 is Gly or amino acid is missing;
      Xaa in position 35 is Ala or amino acid is missing;
<220>
<221> VARIANT
<222> (36)...(36)
<223> Xaa in position 36 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> VARIANT
<222> (37)...(37)
<223> Xaa in position 37 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> VARIANT
<222> (38)...(38)
<223> Xaa in position 38 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> VARIANT
<222> (39)...(39)
<223> Xaa in position 39 is Pro, homoproline, 3Hyp, 4Hyp,
      thioproline, N-alkylglycine, N-alkylpentylglycine,
      N-alkylalanine, or amino acid is missing;
<220>
<221> AMIDATION
<222> (28)...(28)
<223> When Xaa in position 28 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (29)...(29)
<223> When Gly in position 29 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (30)...(30)
<223> When Gly in position 30 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
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<220>
<221> AMIDATION
<222> (31)...(31)
<223> When Xaa in position 31 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (32)...(32)
<223> When Ser in position 32 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (33)...(33)
<223> When Ser in position 33 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (34)...(34)
<223> When Gly in position 34 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (35)...(35)
<223> When Ala in position 35 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (36)...(36)
<223> When Xaa in position 36 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (37)...(37)
<223> When Xaa in position 37 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (38)...(38)
<223> When Xaa in position 38 is terminal amino acid in sequence,
      terminal amino acid may or may not be amidated;
<220>
<221> AMIDATION
<222> (39)...(39)
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<223> When Xaa in position 39 is terminal amino acid in sequence,
           terminal amino acid may or may not be amidated;
     <220>
     <221> VARIANT
     <222> (3)...(28)
     <223> provided that no more than three of Xaa in positions 3, 4, 5,
          8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 19, 20, 21, 24, 25, 26
          27 and 28 are Ala;
     <220>
     <221> VARIANT
     <222> (1)...(9)
     <223> and provided also that, if Xaa in position 1 is His, Arg or Tyr,
          then at least one of Xaa in positions 3, 4 and 9 is Ala.
     <400> 5
1
                                10
25
Xaa Xaa Xaa Xaa Xaa Xaa
     <210> 6
     <211> 30
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
          compound
     <220>
     <221> AMIDATION
     <222> (30)...(30)
     <223> amidated Gly (Glycinamide)
     <400> 6
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                               10
                                                 15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly
                            25
```

```
<210> 7
      <211> 30
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (30)...(30)
      <223> amidated Gly (Glycinamide)
      <400> 7
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly
            20
                                25
                                                     30
      <210> 8
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 8
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Ala Ile Glu Phe Leu Lys Asn
            20
      <210> 9
      <211> 39
      <212> PRT
      <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 9
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 10
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 10
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                25
                                                     30
Ser Gly Ala Pro Pro Pro Ser
        35
```

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<210> 11
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 11
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 12
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 12
Tyr Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25 .
            20
                                                    30
Ser Gly Ala Pro Pro Pro Ser
       35
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<210> 13
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Tyr (Tyrosinamide)
      <400> 13
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
            20
Ser Gly Ala Pro Pro Pro Tyr
        35
      <210> 14
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 14
His Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
```

```
<210> 15
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <223> Xaa in position 6 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 15
His Gly Glu Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
            20
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 16
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
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<400> 16
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His Gly Glu Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu 15

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser 25

Ser Gly Ala Pro Pro Pro Ser 35

<210> 17 <211> 39 <212> PRT

<213> Artificial Sequence

<220>

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<221> AMIDATION

<222> (39)...(39)

<223> amidated Ser (Serinamide)

<400> 17

His Gly Glu Gly Thr Phe Ser Thr Asp Leu Ser Lys Gln Met Glu Glu $1 \hspace{1cm} 5 \hspace{1cm} 10 \hspace{1cm} 15$

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser 20 25 30

Ser Gly Ala Pro Pro Pro Ser 35

<210> 18

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<221> AMIDATION

<222> (39)...(39)

<223> amidated Ser (Serinamide)

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<400> 18
His Gly Glu Gly Thr Phe Thr Thr Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 19
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 19
His Gly Glu Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Glu Glu
1
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
     <210> 20
      <211> 39
      <212> PRT
     <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
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<223> Xaa in position 10 stands for pentylglycine.

<220>

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<220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 20
His Gly Glu Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Met Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
     <210> 21
      <211> 39
      <212> PRT
     <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
     <223> Xaa in position 10 stands for pentylglycine.
     <220>
     <221> AMIDATION
     <222> (39)...(39)
     <223> amidated Ser (Serinamide)
     <400> 21
His Gly Glu Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
                                25
                                                    30
Ser Gly Ala Pro Pro Pro Ser
       35
     <210> 22
     <211> 39
     <212> PRT
     <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 14 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 22
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 23
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 14 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 23
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                25
```

```
Ser Gly Ala Pro Pro Pro Ser
35
```

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<210> 24
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 22 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 24
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                5
                                   10
Glu Ala Val Arg Leu Xaa Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 25
      <211> 39
      <212> PRT
     <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
     <221> AMIDATION
     <222> (39)...(39)
     <223> amidated Ser (Serinamide)
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<400> 25
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His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu 1 5 10 15

Glu Ala Val Arg Leu Phe Val Glu Trp Leu Lys Asn Gly Gly Pro Ser 20 25 30

Ser Gly Ala Pro Pro Pro Ser 35

<210> 26

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<221> AMIDATION

<222> (39)...(39)

<223> amidated Ser (Serinamide)

<400> 26

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu 1 5 10 15

Glu Ala Val Arg Leu Phe Val Glu Phe Leu Lys Asn Gly Gly Pro Ser 20 25 30

Ser Gly Ala Pro Pro Pro Ser 35

<210> 27

<211> 39

<212> PRT

<213> Artificial Sequence

<220S

<223> artificially synthesized sequence of novel exendin agonist compound

<220>

<223> Xaa in position 23 stands for tertiary-butylglycine.

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<220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 27
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 28
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 23 stands for tertiary-butylglycine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 28
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Xaa Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 29
      <211> 39
      <212> PRT
      <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 29
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Asp Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 30
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 30
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
Ser Gly Ala Pro Pro Pro Ser
        35
```

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<210> 31
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 31, 36, 37 and 38 stands for thioproline.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 31
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
                                25
Ser Gly Ala Xaa Xaa Xaa Ser
        35
      <210> 32
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 36, 37 and 38 stands for thioproline.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 32
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
```

```
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                25
Ser Gly Ala Xaa Xaa Ser
        35
      <210> 33
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 31, 36, 37 and 38 stands for homoproline.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 33
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                    10
1
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
            20
                                25
Ser Gly Ala Xaa Xaa Xaa Ser
        35
      <210> 34
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 36, 37 and 38 stands for homoproline.
```

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<220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 34
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Xaa Xaa Xaa Ser
        35
      <210> 35
      <211> 39
      <212> PRT
      <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <223> Xaa in positions 31, 36, 37 and 38 stands for thioproline.
     <220>
     <221> AMIDATION
     <222> (39)...(39)
     <223> amidated Ser (Serinamide)
     <400> 35
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Xaa Ser
                                                    30
                                25
Ser Gly Ala Xaa Xaa Ser
       35
     <210> 36
     <211> 39
     <212> PRT
     <213> Artificial Sequence
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<220>
       <223> artificially synthesized sequence of novel exendin agonist
             compound
       <220>
       <223> Xaa in positions 31, 36, 37 and 38 stands for homoproline.
       <220>
       <221> AMIDATION
      <222> (39)...(39)
       <223> amidated Ser (Serinamide)
      <400> 36
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Xaa Ser
Ser Gly Ala Xaa Xaa Ser
      <210> 37
      <211> 39
      <212> PRT
      <213> Artificial Sequence
       <223> artificially synthesized sequence of novel exendin agonist
            compound
      <223> Xaa in positions 31, 36, 37 and 38 stands for n-methylalanine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 37
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
            20
                                 25
```

```
Ser Gly Ala Xaa Xaa Ser
        35
      <210> 38
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 36, 37 and 38 stands for n-methylalanine.
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 38
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                5
                                   10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
Ser Gly Ala Xaa Xaa Xaa Ser
        35
     <210> 39
      <211> 39
      <212> PRT
      <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
     <223> Xaa in positions 31, 36, 37 and 38 stands for n-methylalanine.
```

<220>

<221> AMIDATION <222> (39)...(39)

<223> amidated Ser (Serinamide)

```
<400> 39
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Xaa Ser
            20
                                25
Ser Gly Ala Xaa Xaa Ser
        35
      <210> 40
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
     <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
     <400> 40
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
     <210> 41
      <211> 28
      <212> PRT
     <213> Artificial Sequence
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<223> artificially synthesized sequence of novel exendin agonist

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<220>

compound

<223> amidated Asn (Asparaginamide)

<221> AMIDATION <222> (28)...(28)

```
<400> 41
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 42
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 42
His Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
     <210> 43
     <211> 28
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
     <221> AMIDATION
     <222> (28)...(28)
```

His Gly Glu Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu 1 5 10 15

<223> amidated Asn (Asparaginamide)

<400> 43

Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn

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<210> 44
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 44
His Gly Glu Gly Thr Ala Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 45
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 45
His Gly Glu Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
```

25

```
<210> 46
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
   <400> 46
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
 1
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 47
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 47
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Leu Glu Glu
                 5
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
```

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<210> 48
       <211> 28
       <212> PRT
       <213> Artificial Sequence
       <223> artificially synthesized sequence of novel exendin agonist
             compound
       <220>
       <221> AMIDATION
       <222> (28)...(28)
       <223> amidated Asn (Asparaginamide)
       <400> 48
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Ala Gln Leu Glu Glu
                  5
                                     10
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
             20
                                 25
      <210> 49
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 49
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Leu Glu Glu
 1
                 5
                                     10
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 50
      <211> 28
      <212> PRT
     <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 50
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 51
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 51
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Ala Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
     <210> 52
     <211> 28
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
           compound
```

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<220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 52
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Ala
 1
                 5
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 53
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 53
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1
                 5
                                     10
                                                         15
Ala Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 54
      <211> 28
     <212> PRT
     <213> Artificial Sequence
     <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
     <221> AMIDATION
     <222> (28)...(28)
     <223> amidated Asn (Asparaginamide)
```

```
<400> 54
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
 1 .
                 5
Glu Ala Ala Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 55
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 55
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1
                 5
Glu Ala Val Ala Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
     <210> 56
     <211> 28
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
           compound
     <220>
```

<221> AMIDATION <222> (28)...(28)

<223> amidated Asn (Asparaginamide)

```
<400> 56
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Ala Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 57
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28) ... (28)
      <223> amidated Asn (Asparaginamide)
      <400> 57
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
Glu Ala Val Arg Leu Phe Ile Ala Phe Leu Lys Asn
            20
     <210> 58
     <211> 28
     <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
           compound
     <220>
     <221> AMIDATION
     <222> (28)...(28)
     <223> amidated Asn (Asparaginamide)
```

His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu

10

15

1

<400> 58

5

Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn

```
20
                                 25
      <210> 59
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 59
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Ala Lys Asn
            20
      <210> 60
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 60
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Ala Asn
            20
                                 25
```

```
<210> 61
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
             compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Ala (Alaninamide)
      <400> 61
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
 1
                                     10
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Ala
            20
                                 25
      <210> 62
      <211> 38
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated Pro (Prolinamide)
      <400> 62
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
                                                     30
Ser Gly Ala Pro Pro Pro
        35
```

```
<210> 63
      <211> 38
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated Pro (Prolinamide)
      <400> 63
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
                                                      30
Ser Gly Ala Pro Pro Pro
        35
      <210> 64
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Pro (Prolinamide)
      <400> 64
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
Ser Gly Ala Pro Pro
        35
```

```
<210> 65
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Pro (Prolinamide)
      <400> 65
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
Ser Gly Ala Pro Pro
        35
      <210> 66
      <211> 36
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated Pro (Prolinamide)
      <400> 66
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
                                                     30
Ser Gly Ala Pro
        35
```

```
<210> 67
       <211> 36
       <212> PRT
       <213> Artificial Sequence
      <220>
       <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated Pro (Prolinamide)
      <400> 67
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
Ser Gly Ala Pro
        35
      <210> 68
      <211> 35
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 68
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
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Ser Gly Ala
        35
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            compound
      <220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 69
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
Ser Gly Ala
        35
      <210> 70
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      <212> PRT
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            compound
      <220>
      <221> AMIDATION
      <222> (34)...(34)
      <223> amidated Gly (Glycinamide)
      <400> 70
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
                                                     30
Ser Gly
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<210> 71
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             compound
       <220>
       <221> AMIDATION
       <222> (34)...(34)
       <223> amidated Gly (Glycinamide)
      <400> 71
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                  5
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
             20
                                 25
Ser Gly
      <210> 72
      <211> 33
      <212> PRT
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            compound
      <220>
      <221> AMIDATION
      <222> (33)...(33)
      <223> amidated Ser (Serinamide)
      <400> 72
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
                                                     30
```

Ser

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<210> 73
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             compound
      <220>
      <221> AMIDATION
      <222> (33)...(33)
      <223> amidated Ser (Serinamide)
      <400> 73
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
Ser
      <210> 74
      <211> 32
      <212> PRT
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            compound
      <220>
      <221> AMIDATION
      <222> (32)...(32)
      <223> amidated Ser (Serinamide)
      <400> 74
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
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<210> 75
       <211> 32
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             compound
      <220>
      <221> AMIDATION
      <222> (32)...(32)
      <223> amidated Ser (Serinamide)
      <400> 75
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
      <210> 76
      <211> 31
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            compound
      <220>
      <221> AMIDATION
      <222> (31)...(31)
      <223> amidated Pro (Prolinamide)
      <400> 76
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro
            20
                                25
                                                     30
     <210> 77
      <211> 31
     <212> PRT
     <213> Artificial Sequence
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            compound
      <220>
      <221> AMIDATION
      <222> (31)...(31)
      <223> amidated Pro (Prolinamide)
      <400> 77
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro
            20
                                 25
      <210> 78
      <211> 30
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (30)...(30)
      <223> amidated Gly (Glycinamide)
      <400> 78
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly
            20
      <210> 79
      <211> 29
      <212> PRT
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           compound
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<220>
      <221> AMIDATION
      <222> (29)...(29)
      <223> amidated Gly (Glycinamide)
      <400> 79
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                 5
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly
            20
      <210> 80
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      <220>
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            compound
      <220>
      <221> AMIDATION
      <222> (29)...(29)
      <223> amidated Gly (Glycinamide)
      <400> 80
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly
            20
                                25
      <210> 81
      <211> 38
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            compound
     <220>
      <223> Xaa in positions 31, 36, 37 and 38 stand for thioproline.
```

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<220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated tPro (thioprolinamide) .
      <400> 81
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
                                 25
Ser Gly Ala Xaa Xaa Xaa
        35
      <210> 82
      <211> 38
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 36, 37 and 38 stand for thioproline.
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated tPro (thioprolinamide)
      <400> 82
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Xaa Xaa Xaa
```

35

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<210> 83
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
             compound
      <220>
      <223> Xaa in position 31 stands for n-methylalanine.
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Pro (Prolinamide)
      <400> 83
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
                                 25
Ser Gly Ala Pro Pro
        35
      <210> 84
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 31, 36 and 37 stands for n-methylalanine.
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Nmeala (n-methylalaninamide)
      <400> 84
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
                                                         15
```

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser

```
20
                                 25
                                                     30
Ser Gly Ala Xaa Xaa
        35
      <210> 85
      <211> 37
      <212> PRT
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            compound
      <220>
      <223> Xaa in positions 31, 36 and 37 stands for homoproline.
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated hPro (homoprolinamide)
      <400> 85
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
            20
Ser Gly Ala Xaa Xaa
        35
      <210> 86
      <211> 36
      <212> PRT
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            compound
      <220>
      <223> Xaa in positions 31 and 36 stands for homoproline.
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<220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated hPro (homoprolinamide)
      <400> 86
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
            20
                                25
Ser Gly Ala Xaa
        35
      <210> 87
      <211> 35
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 87
Arg Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                                    30
Ser Gly Ala
        35
      <210> 88
      <211> 30
      <212> PRT
      <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (30)...(30)
      <223> amidated Gly (Glycinamide)
      <400> 88
His Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly
                                 25
      <210> 89
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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            compound
      <220>
      <223> Xaa in position 6 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 89
His Gly Glu Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
1
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 90
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<220>
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 90
His Gly Glu Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
      <210> 91
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 91
His Gly Glu Gly Thr Phe Ser Thr Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                    10
                                                        15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
          20
                                25
      <210> 92
      <211> 28
     <212> PRT
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<220>
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 92
His Gly Glu Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Ala Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
      <210> 93
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 10 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 93
His Gly Glu Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu
                                                         15
1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 94
      <211> 28
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<213> Artificial Sequence

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<220>
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            compound
      <220>
      <223> Xaa in position 22 stands for naphthylalanine.
     <220>
     <221> AMIDATION
     <222> (28)...(28)
     <223> amidated Asn (Asparaginamide)
     <400> 94
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                        15
                 5
1
Glu Ala Val Arg Leu Xaa Ile Glu Phe Leu Lys Asn
                               25
            20
      <210> 95
      <211> 28
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            compound
     <223> Xaa in position 23 stands for tertiary-butylglycine.
     <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
     <400> 95
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                    10
                5
Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn
            20
                                25
```

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<210> 96
      <211> 28
      <212> PRT
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 96
His Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Asp Phe Leu Lys Asn
            20
      <210> 97
      <211> 33
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (33)...(33)
      <223> amidated Ser (Serinamide)
      <400> 97
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
                                     10
                                                         15 .
 1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                 25
            20
```

Ser

59

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<210> 98
      <211> 29
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      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (29)...(29)
      <223> amidated Gly (Glycinamide)
      <400> 98
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly
                                 25
      <210> 99
      <211> 37
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            compound
      <223> Xaa in positions 31, 36 and 37 stands for homoproline.
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated hPro (homoprolinamide)
      <400> 99
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
            20
                                25
Ser Gly Ala Xaa Xaa
       35
```

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<210> 100
      <211> 28
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      <213> Artificial Sequence
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 100
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 101
      <211> 28
      <212> PRT
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      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 101
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
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<210> 102
      <211> 28
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      <213> Artificial Sequence
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 102
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 103
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 103
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
```

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<210> 104
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 104
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
                                25
            20
      <210> 105
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 105
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                                         15
1
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
      <210> 106
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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<220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 106
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                    10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
      <210> 107
      <211> 28
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 107
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
      <210> 108
      <211> 28
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
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<220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 108
His Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
                 5
                                                          15
 1
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
      <210> 109
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 109
Ala Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
      <210> 110
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
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<220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 110
Ala Ala Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
                                 25
      <210> 111
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 111
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
      <210> 112
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
```

compound

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<220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 112
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 113
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 113
Ala Gly Asp Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                5
                                                        15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
      <210> 114
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
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compound

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<220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 114
Ala Gly Asp Gly Ala Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 115
      <211> 28
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            compound
      <220>
      <223> Xaa in position 6 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 115
Ala Gly Asp Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
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Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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      <223> Xaa in position 6 stands for naphthylalanine.
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 116
Ala Gly Asp Gly Thr Xaa Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 117
Ala Gly Asp Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
1
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 118
Ala Gly Asp Gly Thr Phe Ser Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
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            compound
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      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 119
Ala Gly Asp Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
      <210> 120
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 120
Ala Gly Asp Gly Thr Phe Thr Ala Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
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      <211> 28
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
     <400> 121
Ala Gly Asp Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
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            compound
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      <221> AMIDATION
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      <223> amidated Asn (Asparaginamide)
      <400> 122
Ala Gly Asp Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 123
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 123
Ala Gly Asp Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
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      <210> 124
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            compound
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      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 124
Ala Gly Asp Gly Thr Phe Thr Ser Glu Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 125
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 125
Ala Gly Asp Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
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<213> Artificial Sequence

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            compound
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      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 126
Ala Gly Asp Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
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            compound
      <220>
      <223> Xaa in position 10 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 127
Ala Gly Asp Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Met Glu Glu
                                                         15
 1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
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      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 128
Ala Gly Asp Gly Thr Phe Thr Ser Asp Xaa Ser Lys Gln Leu Glu Glu
 1
                 5
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 129
      <211> 28
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
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      <221> AMIDATION
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      <223> amidated Asn (Asparaginamide)
      <400> 129
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Met Glu Glu
 1
                 5
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 130
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ala Lys Gln Leu Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 131
      <211> 28
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
     <222> (28)...(28)
     <223> amidated Asn (Asparaginamide)
     <400> 131
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Ala Gln Met Glu Glu
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 132
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 132
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Ala Gln Leu Glu Glu
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 133
      <211> 28
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            compound
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      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 133
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Met Glu Glu
                 5
                                     10
                                                         15
 1
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
                                25
            20
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 134
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Ala Leu Glu Glu
                                    10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 135
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 135
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 136
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 136
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Ala Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 137
      <211> 28
      <212> PRT
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            compound
      <220>
      <223> Xaa in position 14 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 137
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 138
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      <212> PRT
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      <220>
      <223> Xaa in position 14 stands for pentylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 138
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Xaa Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 139
      <211> 28
      <212> PRT
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 139
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Ala Glu
 1
                 5
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
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<210> 140
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            compound
      <220>
      <221> AMIDATION
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      <223> amidated Asn (Asparaginamide)
      <400> 140
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Ala Glu
                 5
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 141
      <211> 28
      <212> PRT
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 141
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Ala
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 142
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            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 142
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Ala
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 143
      <211> 28
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      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 143
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Ala Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
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<210> 144
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 144
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                     10
Ala Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn
      <210> 145
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 145
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Ala Arg Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 146
      <211> 28
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 146
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
                                     10
Glu Ala Ala Arg Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                25
      <210> 147
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 147
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Ala Leu Phe Ile Glu Trp Leu Lys Asn
            20
                                 25
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<210> 148
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 148
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                 5
                                    10
Glu Ala Val Ala Leu Phe Ile Glu Phe Leu Lys Asn
            20
                                 25
      <210> 149
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 149
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Ala Phe Ile Glu Trp Leu Lys Asn
            20
                                25
```

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<210> 150
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 150
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Ala Phe Ile Glu Phe Leu Lys Asn
            20
      <210> 151
      <211> 28
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      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 22 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 151
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Xaa Ile Glu Trp Leu Lys Asn
            20
                                25
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<210> 152
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 22 stands for naphthylalanine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 152
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Xaa Ile Glu Phe Leu Lys Asn
            20
      <210> 153
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 153
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
 1
                 5
                                     10
                                                         15
Glu Ala Val Arg Leu Phe Val Glu Trp Leu Lys Asn
            20
                                 25
```

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<210> 154
      <211> 28
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      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
   <400> 154
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Val Glu Phe Leu Lys Asn
      <210> 155
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 23 stands for tertiary-butylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 155
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                    10
1
Glu Ala Val Arg Leu Phe Xaa Glu Trp Leu Lys Asn
            20
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<210> 156
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in position 23 stands for tertiary-butylglycine.
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 156
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Xaa Glu Phe Leu Lys Asn
            20
      <210> 157
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 157
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
1
                 5
                                    10
                                                         15
Glu Ala Val Arg Leu Phe Ile Asp Trp Leu Lys Asn
            20
                                25
```

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<210> 158
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 158
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Asp Phe Leu Lys Asn
            20
                                 25
      <210> 159
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 159
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn
            20
                                 25
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<210> 160
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 160
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Ala Leu Lys Asn
                                 25
            20
      <210> 161
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 161
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                                          15
                  5
 1
Glu Ala Val Arg Leu Phe Ile Glu Trp Ala Lys Asn
             20
                                 25
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<210> 162
      <211> 28
      <212> PRT
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 162
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Phe Ala Lys Asn
      <210> 163
      <211> 28
      <212> PRT
      <213> Artificial Sequence
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      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 163
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Ala Asn
            20
```

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<210> 164
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Asn (Asparaginamide)
      <400> 164
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
                 5
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Ala Asn
            20
                                 25
      <210> 165
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Ala (Alaninamide)
      <400> 165
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                                         15
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Ala
            20
                                 25
```

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<210> 166
      <211> 28
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (28)...(28)
      <223> amidated Ala (Alaninamide)
      <400> 166
Ala Gly Asp Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Ala
                                 25
            20
      <210> 167
      <211> 38
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated Pro (Prolinamide)
      <400> 167
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
 1
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
            20
Ser Gly Ala Pro Pro Pro
        35
```

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<210> 168
     <211> 38
      <212> PRT
     <213> Artificial Sequence
     <220>
     <223> artificially synthesized sequence of novel exendin agonist
            compound
     <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated Pro (Prolinamide)
     <400> 168
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro
        35
      <210> 169
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Pro (Prolinamide)
      <400> 169
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                                     30
                                 25
            20
Ser Gly Ala Pro Pro
        35
```

```
<210> 170
      <211> 36
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated Pro (Prolinamide)
      <400> 170
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
Ser Gly Ala Pro
        35
      <210> 171
      <211> 36
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated Pro (Prolinamide)
      <400> 171
Ala Gly Glu Gly Thr Phe Thr Ser Asp Ala Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                                      30
                                 25
            20
Ser Gly Ala Pro
        35
```

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<210> 172
      <211> 35
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 172
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
1
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
Ser Gly Ala
        35
      <210> 173
      <211> 35
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 173
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                 25
Ser Gly Ala
        35
```

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<210> 174
      <211> 34
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (34)...(34)
      <223> amidated Gly (Glycinamide)
      <400> 174
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
            20
Ser Gly
      <210> 175
      <211> 33
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (33)...(33)
      <223> amidated Ser (Serinamide)
      <400> 175
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu
                 5
                                     10
 1
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
```

Ser

```
<210> 176
      <211> 32
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (32)...(32)
      <223> amidated Ser (Serinamide)
      <400> 176
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
            20
      <210> 177
      <211> 32
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (32)...(32)
      <223> amidated Ser (Serinamide).
      <400> 177
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
                                     10
                 5
 1
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
                                                     30
            20
                                 25
```

```
<210> 178
      <211> 31
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (31)...(31)
      <223> amidated Pro (Prolinamide)
      <400> 178
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                    10
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro
                                25
            20
      <210> 179
      <211> 30
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (30)...(30)
      <223> amidated Gly (Glycinamide)
      <400> 179
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Leu Glu Glu
                                                         15
 1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly
                                                     30
                                 25
            20
```

```
<210> 180
      <211> 29
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (29)...(29)
      <223> amidated Gly (Glycinamide)
      <400> 180
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                     10
1
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly
                                 25
            20
      <210> 181
      <211> 38
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 31, 36, 37 and 38 stand for thioproline.
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated tPro (thioprolinamide)
      <400> 181
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
                                 25
Ser Gly Ala Xaa Xaa Xaa
        35
```

```
<210> 182
      <211> 38
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 36, 37 and 38 stand for thioproline.
      <220>
      <221> AMIDATION
      <222> (38)...(38)
      <223> amidated tPro (thioprolinamide)
      <400> 182
His Gly Glu Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
Ser Gly Ala Xaa Xaa Xaa
        35
      <210> 183
      <211> 37
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <223> Xaa in positions 31, 36 and 37 stands for n-methylalanine.
      <220>
      <221> AMIDATION
      <222> (37)...(37)
      <223> amidated Nmeala (n-methylalaninamide)
      <400> 183
His Gly Glu Gly Thr Phe Thr Ser Ala Leu Ser Lys Gln Met Glu Glu
                                     10
 1
```

Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser 25

20

```
Ser Gly Ala Xaa Xaa
        35
      <210> 184
      <211> 36
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <223> Xaa in positions 31 and 36 stands for homoproline.
      <220>
      <221> AMIDATION
      <222> (36)...(36)
      <223> amidated hPro (homoprolinamide)
      <400> 184
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                                         15
 1
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Xaa Ser
                                 25
                                                     30
            20
Ser Gly Ala Xaa
        35
      <210> 185
      <211> 35
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
```

```
<220>
      <221> AMIDATION
      <222> (35)...(35)
      <223> amidated Ala (Alaninamide)
      <400> 185
His Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                 25
Ser Gly Ala
        35
      <210> 186
      <211> 30
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (30)...(30)
      <223> amidated Gly (Glycinamide)
      <400> 186
His Gly Asp Ala Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                                     10
                                                          15
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly
                                 25
            20
      <210> 187
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
```

compound

```
<220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 187
Ala Gly Glu Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Met Glu Glu
                 5
Glu Ala Val Arg Leu Phe Ile Glu Trp Leu Lys Asn Gly Gly Pro Ser
                                25
Ser Gly Ala Pro Pro Pro Ser
        35
      <210> 188
      <211> 39
      <212> PRT
      <213> Artificial Sequence
      <220>
      <223> artificially synthesized sequence of novel exendin agonist
            compound
      <220>
      <221> AMIDATION
      <222> (39)...(39)
      <223> amidated Ser (Serinamide)
      <400> 188
Ala Gly Ala Gly Thr Phe Thr Ser Asp Leu Ser Lys Gln Leu Glu Glu
                                                         15
                                    10
                 5
Glu Ala Val Arg Leu Phe Ile Glu Phe Leu Lys Asn Gly Gly Pro Ser
            20
                                 25
```

Ser Gly Ala Pro Pro Pro Ser

35